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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,246	01/31/2002	Wee Lee Ng	TI-33486	2785

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EXAMINER

PATEL, ISHWARBHAI B

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/066,246	<b>Applicant(s)</b> NG ET AL.	
	<b>Examiner</b> Ishwar (I. B.) Patel	<b>Art Unit</b> 2827	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 8,10,11,17 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9 and 12-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
     a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding both the claims 1 and 12, the phrase “a patterned electrically conductive **second** material” is confusing. It is unclear to the examiner what is electrically conductive second material, when electrically conductive first material is not claimed.

To be consistent with “a first layer”, for the non-conductive material, the phrase may be modified to read - - a second layer of electrically conductive material - -.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7, 9 and 12-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Ziemkowski, US Patent No. 6,294,742.

Regarding claim 1, Ziemkowski discloses a printed circuit board (PCB) comprising:

*a first layer of electrically non-conductive material (surface layer of printed wiring board 100, see figure 1, column 2, line 42-50), and*

*a patterned second layer of electrically conductive material disposed in contact with said first layer (pads 101, 102 and traces 111 disposed on the surface, see figure 1, column 2, line 42-50),*

*said electrically conductive material forming a patterned bond pad defining a channel therein, said first layer of electrically non-conductive material exposed in said channel through said patterned electrically conductive material (solder pad 102 with trenches 105, figure 2A-2B, column 2, line 64 to column 3, line 1-10).*

Regarding claim 2, Ziemkowski further discloses the said bond pad dimensioned non-planar, see figure 2A-2b.

Regarding claim 3, Ziemkowski further discloses the bond pad dimensioned to define a plurality of said channels extending laterally through said bond pad, see figure 2A-2B.

Regarding claim 4, Ziemkowski further discloses a plurality of pads disposed about said bond pad, bond pads 101, see figure 1A-1B.

Regarding claim 5, Ziemkowski further discloses the channels defined in radial pattern, see figure 2A-2B.

Regarding claim 6, Ziemkowski further discloses said radial lines terminate at a point distant from a focal point, see figure 2A-2B.

Regarding claim 7, Ziemkowski further discloses said radial lines have different lengths, see figure 2A-2B.

Regarding claim 9, Ziemkowski further discloses the said channels defined as multiple lines, see figure 2A-2B.

Regarding claim 12, Ziemkowski discloses an integrated circuit having a lower surface including an exposed solder pad (surface mount component, power MOSFET 109, though shown as 104 in the figure, soldered to the bond pads, see figure 1A, column 2, line 42, and as the lower surface of component is connected to the top surface of the bond pad, the component will inherently have exposed connection pads at the lower surface);

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a first layer of electrically non conductive material (surface of printed wiring board 100), see figure 1, column 2, line 42-50); and

a patterned second layer of electrically conductive material disposed in contact with said first layer and opposed to said solder pad (pads 101, 102 and traces 111 disposed on the surface, see figure 1, column 2, line 42-50),

said patterned electrically conductive material form a bond pad defining a channel therein, said first layer of electrically non-conductive material exposed in said channel through said patterned electrically conductive material (solder pad 102 with trenches 105, figure 2A-2B, column 2, line 64 to column 3, line 1-10).

Regarding claim13, Ziemkowski further discloses the said bond pad dimensioned non-planar, as applied to claim 2 above.

Regarding claim14, Ziemkowski further discloses the bond pad dimensioned to define a plurality of said channels extending laterally through said bond pad, as applied to claim 3 above.

Regarding claim 15, Ziemkowski further discloses the channels defined in radial pattern, as applied to claim 5 above.

Regarding claim 16, Ziemkowski further discloses the said channels defined as multiple lines, as applied to claim 9 above.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-7, 9 and 12-16 have been considered but are moot / not persuasive in view of the new ground(s) / new explanation of rejection.

The applied prior art of Ziemkowski discloses the channels exposing the non-conductive material exposed through the channel.

Further, channels are facilitating outgassing of bubbles is an intended use of the structure. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

In claim 4, the bond pad is adapted to receive a multi pin integrated circuit, but does not claim the integrated circuit and further, the recitation that an element is "adapted to" to perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

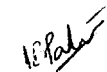
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (571) 272 1933. The examiner can normally be reached on M-F (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272 1957. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0658.



ibp

January 8, 2004

